Patent claims

1. A method for the production of shaped zeolites, characterized by the process steps

a) mixing of (i) at least one type of zeolite crystal from the faujasite family having an SiO_2/Al_2O_3 ratio of ≤ 3.0, in particular zeolite LSX or zeolite LSX and zeolite 13X, with (ii) finely divided attapulgite binder or finely divided attapulgite binder and at least one further clay binder and (iii) addition of water,

b) production of shaped zeolite bodies from the mixture prepared in step a),

c) drying and calcination of the zeolite bodies shaped in step a) in order to obtain the active adsorbent,

the finely divided attapulgite binder being characterized in that its bulk density, measured according to EN ISO 797:1995D, is greater than 550 g/l.

2. The process as claimed in Claim 1, characterized in that an ion exchange is effected after step c).

3. The method as claimed in Claim 1 or 2, characterized in that the proportion of the binder in the finished adsorbent accounts for a proportion of between 2 and 30 percent by weight.

4. The method as claimed in Claim 3, characterized in that the proportion of the binder in

the finished adsorbent accounts for a proportion of between 5 and 20 percent by weight.

5. The method as claimed in any of the preceding claims, characterized in that from 10 to 90% of the binder is conventional clay binder.

6. The method as claimed in Claim 5, characterized in that not more than 80% of the binder is conventional clay binder.

7. The method as claimed in Claim 5, characterized in that not more than 70% of the binder is conventional clay binder.

8. The method as claimed in any of the preceding claims, characterized in that the zeolite types 13X and LSX are used in a ratio of from 90:10 to 5:95.

9. The method as claimed in any of the preceding claims, characterized in that at least 70%, preferably at least 90%, of the two zeolite types 13X and LSX are present in the sodium form.

10. The method as claimed in Claim 9, characterized in that not more than 30%, preferably not more than 10%, of the two zeolite types 13X and LSX are present in the potassium form.

11. The method as claimed in any of Claims 1 to 8, characterized in that from 60 to 95%, preferably between 75 and 85%, of the two zeolite types 13X and LSX are present in the calcium form.

12. The method as claimed in any of the preceding claims, characterized in that a pore-forming agent is added to the mixture of the zeolite crystals and the

binder.

13. The method as claimed in any of the preceding claims, characterized in that the pore-forming agent is added in an amount which corresponds to an amount between 2 and 15 percent by weight, based on the finished product.

14. A zeolitic adsorbent obtainable by means of the method as claimed in any of the preceding claims.

15. A method for eliminating one or more impurities from a gas stream, characterized in that the gas stream is passed through a bed of the zeolitic adsorbent as claimed in Claim 14.

16. The method as claimed in Claim 15, characterized in that the gas stream is an air stream and the impurity is selected from the group consisting of carbon dioxide, water, nitrous oxide, another inorganic gas, hydrocarbons and mixtures of two or more of these substances.

17. The method as claimed in Claim 15 or 16, characterized in that the impurity is carbon dioxide.

18. The method as claimed in any of Claims 15 to 17, characterized in that the adsorption is effected alternately with a desorption in the PSA mode or in particular in the TSA mode.

19. The use of a zeolitic adsorbent as claimed in Claim 14 for eliminating impurities selected from the group consisting of carbon dioxide, water, nitrous oxide, another inorganic gas, hydrocarbons and mixtures of two or more of these substances from a gas stream,

in particular an air stream.

20. The use as claimed in Claim 19, characterized in that the impurity is carbon dioxide.